

L2-CHEMMR



NEW ZEALAND QUALIFICATIONS AUTHORITY
MANA TOHU MĀTAURANGA O AOTEAROA

QUALIFY FOR THE FUTURE WORLD
KIA NOHO TAKATŪ KI TŌ ĀMUA AO!

Te Mātauranga Matū, Kaupae 2, 2017

2.00 i te ahiahi Rāpare 16 Whiringa-ā-rangi 2017

PUKA RAUEMI
mō 91164M, 91165M, 91166M

Tirohia tēnei pukapuka hei whakatutuki i ngā tūmahi o ō Pukapuka Tūmahi, Tuhiinga hoki.

Tirohia mēnā e tika ana te raupapatanga o ngā whārangi 2–3 kei roto i tēnei pukapuka, ka mutu, kāore tētahi o aua whārangi i te takoto kau.

KA TAEA TĒNEI PUKA TE PUPURI HEI TE MUTUNGA O TE WHAKAMĀTAUTAU.

TE TAKA PŪMOTU

18

		Tau Iraoho																																																										
		Papatipu Rāpoi Ngota/ g mol ⁻¹																																																										
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18																																											
3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20																																											
Li 6.9	Be 9.0	Na 23.0	Mg 24.3	K 39.1	Ca 40.1	K 39.1	Sr 87.6	Rb 85.5	Cs 133	Fr 223	B 10.8	C 12.0	N 14.0	O 16.0	F 19.0	Ne 20.2	He 4.0																																											
11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36																																			
Na 23.0	Mg 24.3	Al 27.0	Si 28.1	P 31.0	S 32.1	Cl 35.5	Ar 40.0	K 39.1	Ca 40.1	Sc 45.0	Ti 47.9	V 50.9	Cr 52.0	Mn 54.9	Fe 55.9	Co 58.9	Ni 58.7	Cu 63.5	Zn 65.4	Ga 69.7	Ge 72.6	As 74.9	Se 79.0	Br 79.9	Kr 83.8																																			
37	38	39	40	41	42	43	44	45	46	47	48	49	50	51	52	53	54	55	56	57	58	59	60	61	62	63	64	65	66	67	68	69	70																											
Rb 85.5	Sr 87.6	Y 88.9	Zr 91.2	Nb 92.9	Mo 95.9	Tc 98.9	Ru 101	Rh 103	Pd 106	Ag 108	Cd 112	In 115	Sn 119	Sb 122	Te 128	I 127	Xe 131	Cs 133	Ba 137	La 139	Ce 140	Pr 141	Nd 144	Pm 147	Sm 150	Eu 152	Gd 157	Tb 159	Dy 163	Ho 165	Er 167	Tm 169	Yb 173																											
87	88	89	90	91	92	93	94	95	96	97	98	99	100	101	102	103	104	105	106	107	108	109	110	111	112	113	114	115	116	117	118	119	120	121	122	123	124	125	126	127	128	129	130																	
Fr 223	Ra 226	Ac 227	Th 232	Pa 231	U 238	Np 237	Pu 239	Am 241	Cm 244	Bk 249	Cf 251	Es 252	Fm 257	Md 258	No 259	Lr 262	Rf 261	Db 262	Sg 263	Bh 264	Hs 265	Mt 268	Ds 271	Rg 272	Cn 277	Nh 272	Fl 272	Mc 272	Lv 272	Ts 272	Og 272	Rn 222	At 210	Po 210	Bi 209	Pb 207	Tl 204	Hg 201	Au 197	Pt 195	Ir 192	Os 190	Re 186	W 184	Ta 181	Hf 179	Ta 181	W 184	Re 186	Os 190	Ir 192	Pt 195	Au 197	Hg 201	Tl 204	Pb 207	Bi 209	Po 210	At 210	Rn 222

Te Raupapa Lanthanide		Te Raupapa Actinide																																									
57	58	59	60	61	62	63	64	65	66	67	68	69	70	71	72	73	74	75	76	77	78	79	80	81	82	83	84	85	86	87													
La 139	Ce 140	Pr 141	Nd 144	Pm 147	Sm 150	Eu 152	Gd 157	Tb 159	Dy 163	Ho 165	Er 167	Tm 169	Yb 173	Ac 227	Th 232	Pa 231	U 238	Np 237	Pu 239	Am 241	Cm 244	Bk 249	Cf 251	Es 252	Fm 257	Md 258	No 259	Lr 262	Rf 261	Db 262	Sg 263	Bh 264	Hs 265	Mt 268	Ds 271	Rg 272	Cn 277	Nh 272	Fl 272	Mc 272	Lv 272	Ts 272	Og 272

PERIODIC TABLE OF THE ELEMENTS

18

		Molar mass/g mol ⁻¹																	
		Atomic number																	
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18		
3	Li 6.9											B 10.8	C 12.0	N 14.0	O 16.0	F 19.0	He 4.0		
11	Na 23.0	Mg 24.3										Al 27.0	Si 28.1	P 31.0	S 32.1	Cl 35.5	Ar 40.0		
19	K 39.1	Ca 40.1	Sc 45.0	Ti 47.9	V 50.9	Cr 52.0	Mn 54.9	Fe 55.9	Co 58.9	Ni 58.7	Zn 65.4	Ga 69.7	Ge 72.6	As 74.9	Se 79.0	Br 79.9	Kr 83.8		
37	Rb 85.5	Sr 87.6	Y 88.9	Zr 91.2	Nb 92.9	Mo 95.9	Tc 98.9	Ru 101	Rh 103	Pd 106	Cd 112	In 115	Sn 119	Sb 122	Te 128	I 127	Xe 131		
55	Cs 133	Ba 137	Lu 175	Hf 179	Ta 181	W 184	Re 186	Os 190	Ir 192	Pt 195	Hg 201	Tl 204	Pb 207	Bi 209	Po 210	At 210	Rn 222		
87	Fr 223	Ra 226	Lr 262	Rf 261	Db 262	Sg 263	Bh 264	Hs 265	Mt 268	Ds 271	Cn 277	Nh 272	Fl 272	Mc 272	Lv 272	Ts 272	Og 272		

Lanthanide Series	57	La 139	Ce 140	Pr 141	Nd 144	Pm 147	Sm 150	Gd 157	Tb 159	Dy 163	Ho 165	Er 167	Tm 169	Yb 173
	89	Ac 227	Th 232	Pa 231	U 238	Np 237	Pu 239	Cm 244	Bk 249	Cf 251	Es 252	Fm 257	Md 258	No 259

English translation of the wording on the front cover

L2-CHEMMR

Level 2 Chemistry, 2017

2.00 p.m. Thursday 16 November 2017

RESOURCE SHEET
for 91164, 91165, 91166

Refer to this booklet to answer the questions in your Question and Answer Booklets.

Check that this booklet has pages 2–3 in the correct order and that none of these pages is blank.

YOU MAY KEEP THIS BOOKLET AT THE END OF THE EXAMINATION.